A SYSTEM AND APPARATUS FOR COMPUTER SIMULATION OF FLIGHT TEST BEDS

5 **Abstract of the Disclosure**

Virtual Real Time (VRT) provides high fidelity timing for software simulator environment running in a workstation. VRT is scalable and controllable. VRT provides flight and simulation software synchronization mechanism. This feature guarantees that the causality effect between flight software when interacting with simulated devices is

10 the same as running flight software in a real test-bed environment. VRT provides high-resolution timing, which facilitates monitoring and detection of timing related faults while running the simulation software system on a workstation. VRT is modularized, such that the switchover from virtual clock to real clock is a trivial task. Running the system on a workstation using VRT behaves exactly like a real system, with the added benefits of

15 user controllable features such as start, stop, monitor and time-scale. Performance of systems running with VRT is generally very good, equal to or better than the hardware, as the software runs natively on a faster workstation.